Dynamic Air Trapping vs. Emphysema Analysis

The aeroted lung image is obtained by segmenting the inspiration image below threshold -50 HU (noted as **aeroted** below). The emphysema area is obtained by segmenting below the inspiration image below threshold -910 HU (noted as "**severe**" below). The dynamic air trapping area is obtained by segmenting the non-severe and aeroted lung difference image with variant thresholds (noted as "**dyn**" below). We choose threshold from 0 to 200 in every 25 HU.

For each threshold, we compute the following ratios:

1. severe / aeroted

2. dyn / aeroted

3. dyn+severe /aeroted

The following images show the correlation value between these raiots and PFT values. X-axis is PFT and Y-axis is ratios annoted with the correspoind threshold. For example, "dyn 50" means the ratio for dyn / aeroted with threshold = 50.
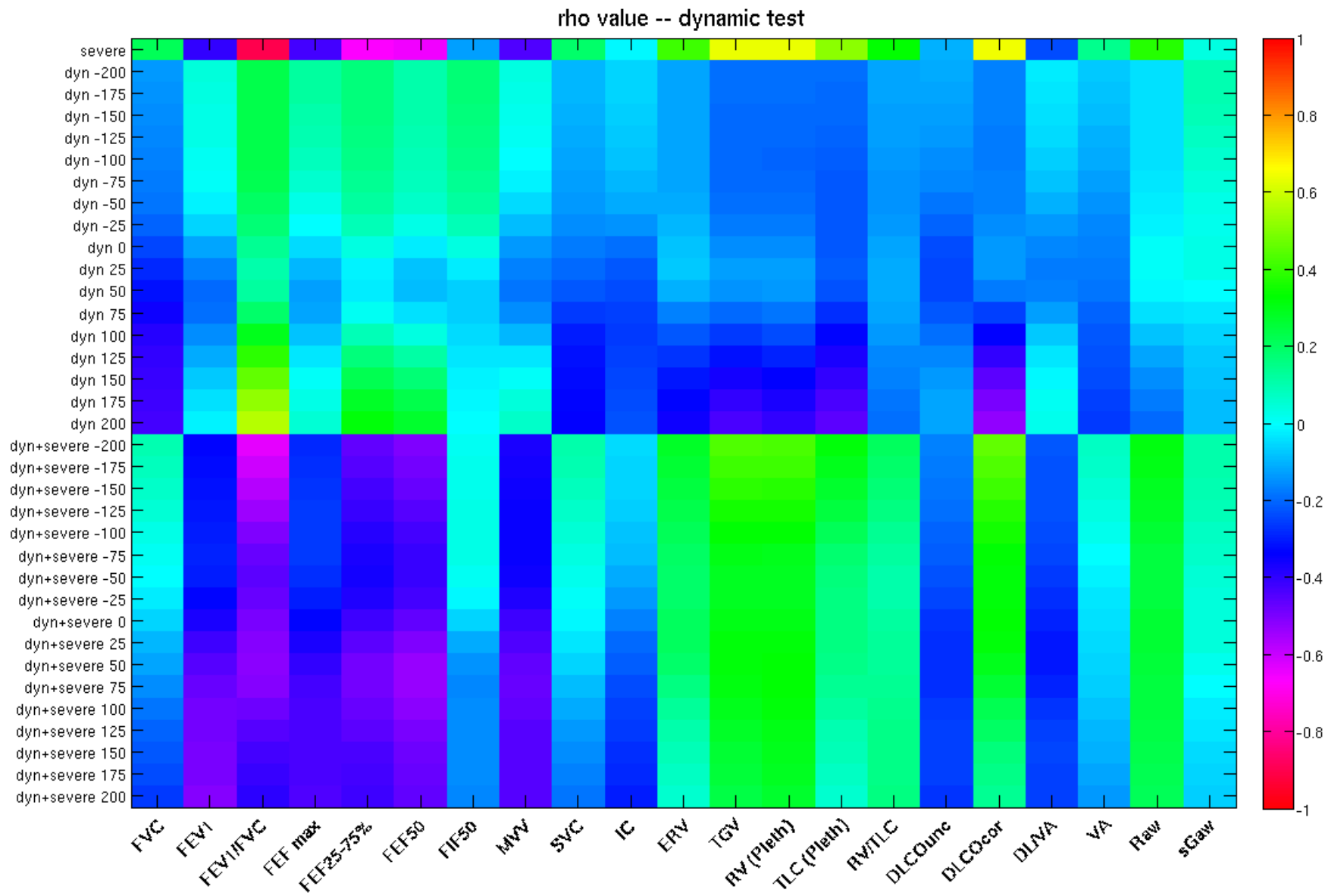
Figure 1: rho value for different ratios vs PFT, on the whole database. X axis is PFT. Y axis is computed ratios. The number of Y axis label is the corresponding threshold chosen for segmenting dynamic air trapping area.
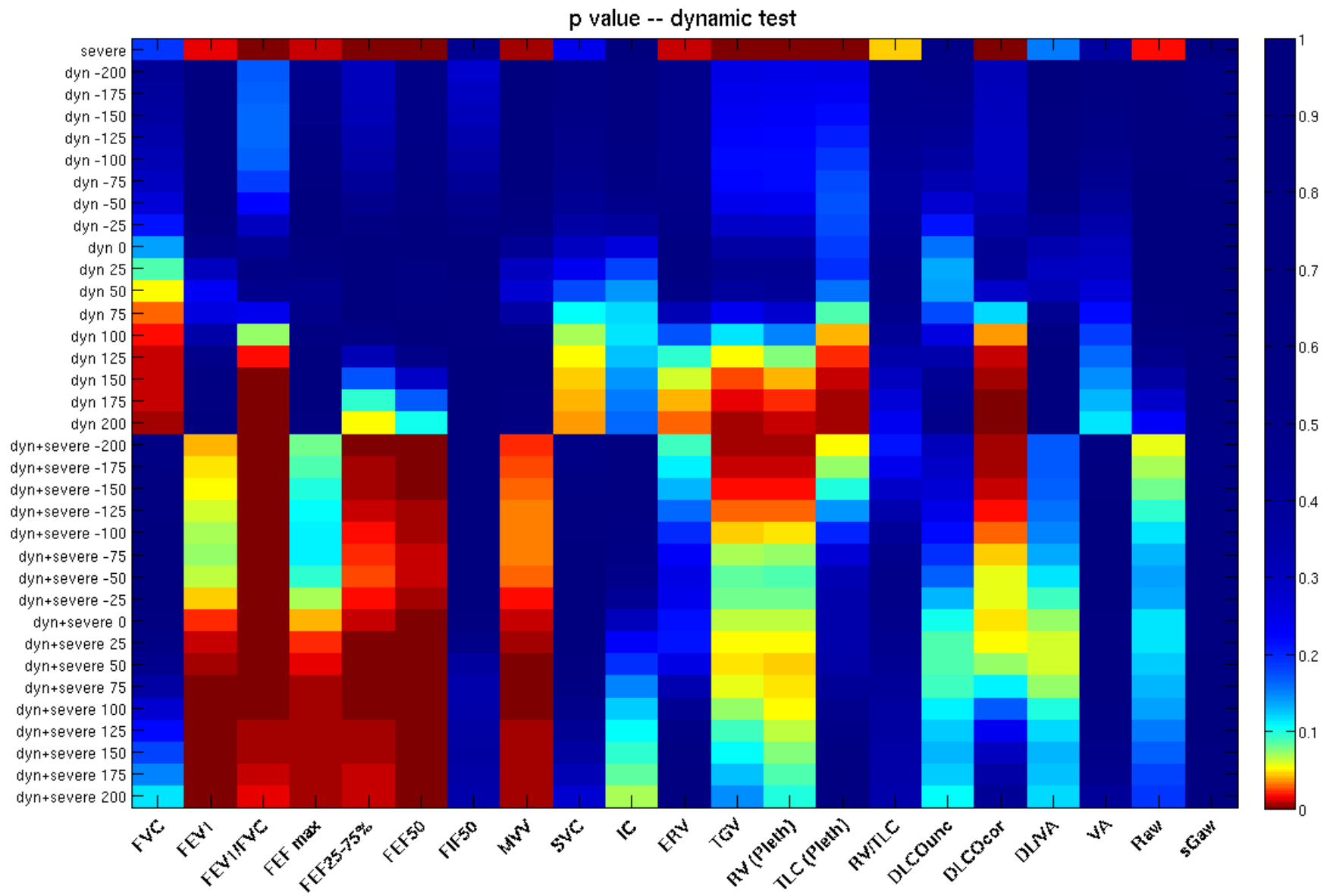
Figure 2: p value for different ratios vs PFT, on the whole database. X axis is PFT. Y axis is computed ratios. The number of Y axis label is the corresponding threshold chosen for segmenting dynamic air trapping area.